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Alton Hill DM

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT OFFICE

ENVIRONMENTAL ASSESSMENT NO. OR090-00-25
Alton Hill DM Timber Sale

I. INTRODUCTION

A. BACKGROUND

In June 1999, the Alton Hill Density Management Timber Sale Environmental Assessment (EA) No. OR090-98-23 was released for public review. Prior to a final decision, however, several survey protocols and other agency direction for certain Survey and Manage/Protection Buffer species were developed. Since that time, protocol surveys have been completed and additional analysis regarding Survey and Manage/Protection Buffer species has been conducted. This document incorporates the most current information regarding the species found within the proposed project area, and by doing so replaces the original EA.

Those passages which have been added or clarified since the June 2000 release of this EA appear in a different font.

B. PURPOSE OF AND NEED FOR THE ACTION

This action proposes timber harvest and other forest management activities, including stream channel enhancement, within a project area located in Section 17, Township 23 South, Range 3 West, Willamette Meridian, Lane County, Oregon, in the South Valley Resource Area of the Eugene District of the Bureau of Land Management (BLM).

The project area is within the Matrix Land Use Allocation and has management objectives for Connectivity and Riparian Reserves. Within the Connectivity portion of the project area, the purpose of the Proposed Action is to provide a sustainable flow of forest products and improve stand vigor to accelerate diameter growth. The need for the action is established in the Eugene District Record of Decision and Resource Management Plan, which directs that timber be harvested from Matrix lands to provide a sustainable supply of timber, and by the fact that suppression mortality is occurring.

The purpose of the Proposed Action within the Riparian Reserves is to reduce stand density to accelerate diameter growth, and to improve stream structure in a fish-bearing stream. The need for the action is established in the Eugene District Record of Decision and Resource Management Plan, which directs that silvicultural practices be applied in Riparian Reserves to acquire desired vegetative and structural characteristics needed to attain Aquatic Conservation Strategy objectives; and by the fact that suppression mortality is occurring.

C. CONFORMANCE WITH LAND USE PLAN

The Proposed Action and alternatives are in conformance with the "Eugene District Record of Decision and Resource Management Plan," June 1995 (RMP). The RMP makes land use allocations and allows for density management thinnings in the Connectivity land use allocation

and silvicultural practices within the Riparian Reserves to acquire desired vegetative and structural characteristics needed to attain ACS objectives.

Plan maintenance documentation postponing surveys for seven Survey and Manage and Protection Buffer species was recently completed ("Plan Maintenance Documentation, USDI Bureau of Land Management, To Change the Implementation Schedule for Survey and Manage and Protection Buffer Species," approved March 13, 2000). This plan maintenance delays the survey requirements because these seven fungi species may require five or more years of surveys to have a high likelihood of locating sites occupied by the species, and therefore have feasibility problems for completion of pre-project surveys. In lieu of these multi-year surveys, "single season" survey protocols have been developed for these seven species; such surveys have been conducted for this project. Thus, the Proposed Action and alternatives are in conformance with the direction provided in the Plan Maintenance Documentation. The implementation of the plan maintenance is provided for by BLM planning regulations (43 CFR 1610.5-4).

The effect of the plan maintenance action was analyzed in an environmental assessment (EA), "To Change the Implementation Schedule for Survey and Manage and Protection Buffer Species," issued October 7, 1998 ("Schedule Change EA"). The analysis contained in the Schedule Change EA is incorporated into this document by reference.

In addition, a Supplemental EIS is being prepared that proposes amendments to the Survey and Manage and Protection Buffer species standards and guidelines (For Amendment to the Survey and Manage, Protection Buffer, and Other Mitigating Measures Standards and Guidelines, USDA Forest Service and USDI Bureau of Land Management). If that FSEIS is completed prior to a decision on this project and provides information that would indicate other management is necessary for the Survey and Manage/Protection Buffer species known to exist within the project area, the Proposed Action would be modified or withdrawn.

Additional site-specific information is available in the Alton Hill Timber Sale project analysis file. This file and the above referenced documents are available for review at the Eugene District Office. The Schedule Change EA and Plan Maintenance Documentation are also available for review on the internet at <http://www.or.blm.gov/nwfp.htm>.

II. ISSUES

A. ISSUES SELECTED FOR ANALYSIS

The following issues were identified during development of the action alternatives:

Issue 1: *How will timber harvests affect attainment of Aquatic Conservation Strategy (ACS) objectives at the watershed scale?*

In order for a proposal to comply with the Northwest Forest Plan, it must be shown that the project, at a minimum, does not prevent or retard attainment of the nine Aquatic Conservation Strategy Objectives on a watershed or landscape scale. Activities described in the Proposed Action and alternatives may have some effect on BLM's ability to meet these objectives.

Issue 2: *How will timber harvests affect northern spotted owl foraging and dispersal habitat?*

The project area is located within the home range of two spotted owl activity centers and may provide foraging habitat for both sites. The project area may also provide dispersal habitat for owls seeking unoccupied territory. Timber harvests may affect the quantity and quality of foraging and dispersal habitat within the project area.

Issue 3: *What are the effects of winter logging/road density and rocking on special status wildlife species?*

Because the project area is in lower elevations not normally subject to snow, it is suitable for winter-time logging. However, winter harvest would require rocked roads and may have different impacts than the same activity during summer.

Issue 4: *What are the effects on native plant species as a result of timber harvests and road construction?*

Timber harvest and road construction can change the microclimate factors that support forest floor native plants. This could lead to increased competition from hardier, non-native plant species.

Issue 5: *What are the effects on certain Survey and Manage/Protection Buffer species as a result of timber harvest and road construction?*

Several Survey and Manage/Protection Buffer species are known to exist within the project area. These species include red tree voles, Oregon megomphix, blue-gray tail-droppers, Otidea fungi and Sarcosoma fungi. Timber harvest and road construction could affect these species.

B. ISSUES NOT ANALYZED

"Single season" surveys were completed for the seven Survey and Manage or Protection Buffer species listed in the plan maintenance documentation for the Schedule Change EA. While these surveys may locate some individuals if localized conditions are right, conditions may not be right in other places in any given year. To have a high likelihood of finding these species, surveys may need to be done for several years over a variety of climatic conditions. Therefore, it is possible that there are undetected individuals of these species in the project area. The issue of how the Proposed Action and alternatives would impact undetected individuals or populations of these species was not analyzed because impacts are not expected to exceed those anticipated in the Schedule Change EA.

III. PROPOSED ACTION AND ALTERNATIVES

The Proposed Action and Alternative A consider timber harvest and other forest management activities on approximately 41 acres (35 Matrix acres, 6 Riparian Reserve) and stream enhancement treatments on approximately 3 acres.

A. PROPOSED ACTION - Density Management/Riparian Reserve Treatment

The Proposed Action is designed to provide forest products, promote diameter growth, and increase the amount of in-stream structure in a fish-bearing stream (see map). This alternative proposes thinning the Matrix lands from below to two densities; treating the outer Riparian Reserves by thinning to the same densities as adjacent upland areas; and placing large woody debris within a stream. Approximately 645 thousand board feet (MBF) or 1160 cunits (100 cubic feet or CCF) of timber would be offered for sale.

Silviculture

All trees not specifically identified for retention would be cut.

No trees would be planted; therefore no site preparation would be needed. Roadside hazard reduction would include covering and fall burning of roadside piles created by harvest operations along Roads 23-3-17 and 23-3-18. Piles along temporary spur roads would be left uncovered and unburned.

Retention

In the well-stocked areas, green trees would be retained at an average density of 70 trees per acre (TPA).

In the overstocked areas, green trees would be retained at an average density of 120 TPA.

Spacing would be varied to reserve the largest trees. Western redcedar and hardwood trees would be retained where possible. Snags and large remnant seed trees would be retained where possible. Snags or remnant seed trees that pose a safety hazard to woods workers would be felled and retained for Coarse Woody Debris. Downed woody debris of decay classes 3, 4, and 5 would be retained where possible.

Western hemlock would be retained where possible except where it occurs in thickets, where it would be retained at the same density as the adjacent stand.

Reserves

Riparian Reserve widths for non-fishbearing streams in the Upper Coast Fork Willamette Watershed are based on the height of one site-potential tree (200 feet) on both sides of the stream; for fishbearing streams Riparian Reserve widths are twice the height of one site-potential tree (400 feet). This is in accordance with the standards and guidelines in the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (NSO ROD) (Appendix C, pp. 31-38).

The Riparian Reserve for Stream 12 would receive an in-stream structure treatment as described under "Stream Channel Enhancement."

The Riparian Reserves for Streams 1, 2, 3, 6 (above confluence with 8), 7, 8, and 9 would be thinned to within approximately 100 feet of the streams (Stream 3 to the property line) to the same densities as adjacent upland Matrix. Within the treated portion of these Riparian Reserves, approximately 10 TPA larger than 12 inches in diameter would be cut and left on site. These 10 TPA would not be part of the 70/120 TPA identified for retention.

Four "Plus" trees from the Eugene District Tree Improvement Program would be reserved.

Survey and Manage/Protection Buffer Species

The cluster of red tree vole nest trees would be protected by a 10-acre reserve.

The Sarcosoma, Otidea, and mollusk known sites would be protected by a reserve of approximately 1/4 acre for each site, except where the reserve is contiguous with another reserve, such as a Riparian Reserve; and where two or more known sites may be located such that they may share a 1/4-acre reserve.

Because the distribution pattern of *Ulota megalospora* in the general area of the project area is not disjunct or highly localized, no protection of known sites is required. Nonetheless, the four trees on which these mosses were found are marked for retention.

Stream Channel Enhancement

To provide instream structure for Stream 12, a total of 30-50 trees within the Riparian Reserve would be felled and bucked into the stream. Tree selection would focus on larger trees that would provide adequate channel structure without jeopardizing streamside shade or streambank integrity. Trees felled would be 25-75 feet from the stream. No riparian falling would occur on slopes greater than 40%. Approximately 1,500 feet of Stream 12 would be treated. The proposal would be implemented by a service contract separate from the timber sale contract.

Roads and Yarding

Approximately 1,550 feet of road would be constructed (Spurs A, B, and C). Roads would have a 14-foot subgrade width with no ditch and outsloped, where possible. The Purchaser would have the option to rock the spurs to allow for winter logging. If rocked, the subgrade width would increase to 16 feet.

If roads are not rocked, newly constructed roads would be blocked and water barred between logging seasons. Completion of the project would take no more than 3 years. Upon completion of the project, newly constructed roads and landings would be blocked and subsoiled (i.e. mechanically breaking up the compacted area of the road).

If roads are rocked, they would remain intact for use during future management actions after project completion.

Because Spur C would begin in an area infested with scotchbroom, construction of Spurs A and B would be completed prior to construction of Spur C to minimize spread of scotchbroom seed into uninfested areas. When constructing Spur C, the operator would "walk" road construction equipment into the stand for the first 50 feet of new construction and later push material out of the stand across that first 50 feet.

Ground-based yarding would be allowed in areas where slopes are less than 35%, but would not be allowed in the Riparian Reserves. The Riparian Reserves, where harvested, and the remaining uplands would be logged with cable yarding systems. Yarding operations would adhere to the relevant Best Management Practices (BMPs) listed in Appendix C of the RMP.

B. ALTERNATIVE A - Regeneration Harvest/Riparian Reserve Treatment

This alternative proposes treating the Connectivity portion of the project area with a Regeneration Harvest. The Riparian Reserves would be treated as described in the Proposed Action. Approximately 41 acres would be treated (35 Matrix acres, 6 Riparian Reserve acres), and approximately 1.2 million board feet (MMBF) would be harvested.

Silviculture

All trees not marked for retention would be cut.

Should a post-harvest evaluation determine a need for site preparation work, it would include excavator piling, pile covering and burning on slopes greater than 40%, and swamper burning on slopes less than 40%. Approximately 10% of the piles would be left unburned for wildlife habitat.

Approximately 400 seedlings per acre would be planted, using genetically improved seedlings from the Tree Improvement Program if available. Up to 10% of the trees planted would be western redcedar; the rest would be Douglas-fir. Planted seedlings would be netted to reduce deer browse.

Retention

In the Matrix portion of the project area, approximately 12-18 TPA would be reserved, of which at least 12 would be conifers and no more than 3 would be hardwoods. An additional 2-3 green conifers per acre greater than 20 inches would be retained for snag recruitment. An additional 3 conifers per acre would be retained for future coarse woody debris recruitment.

Retention trees would be well distributed throughout the harvest area. Approximately 70% of the retention trees would be clumped and would be from all diameter classes. Approximately 30% would be dispersed and would be from the larger diameter classes, generally greater than 18

inches in diameter, where available. Clumps would be located to buffer snags, downed logs, remnant seed trees, and other desirable stand structures, where possible.

All other **Retention** features, and all other design features including **Reserves**, **Survey and Manage/Protection Buffer Species**, **Stream Channel Enhancement**, and **Roads and Yarding** would be the same as the Proposed Action.

C. ALTERNATIVE B - No action

All timber harvest activities would be deferred; no management activities described under the Proposed Action or Alternative A would occur, and no timber would be offered for sale at this time. Because the project area is within the Matrix land use allocation, it may be considered for future timber harvests even if this alternative is selected at this time.

D. ALTERNATIVES CONSIDERED BUT NOT ANALYZED

The Oregon Natural Resources Council suggested an alternative to use prescribed fire to attain desired stand conditions. This was considered but not analyzed in detail because this alternative would not respond to the purpose and need for the action. First, prescribed fire does not meet the Matrix land use allocation objective of providing a sustainable supply of timber. Second, prescribed fire would not necessarily result in the retention of the most vigorous trees or the minor conifer species. Third, a controlled fire hot enough to kill individual trees would likely destroy the entire stand.

IV. EXISTING CONDITIONS

A. GENERAL SETTING

The project area is in the Willamette Province and in the Garoutte Creek drainage of the Upper Coast Fork Willamette Watershed, formerly known as the Cottage Grove Lake/Big River Watershed. Watershed analysis has been completed (BLM Eugene District, Cottage Grove Lake/Big River Watershed Analysis, May 1997). The Cottage Grove Lake/Big River Watershed Analysis analyzed the condition of the Riparian Reserves in the watershed and established guidelines under which they should be treated. (Cottage Grove Lake/Big River Watershed Analysis, Chapter 4, pages 4-6.)

The plants and animals in this project area do not differ significantly from those discussed in the Eugene District Resource Management Plan/Environmental Impact Statement (RMP EIS) (Chapter 3). The following resources are also discussed in greater detail in the project file.

B. SPECIFIC RESOURCE DESCRIPTIONS

Vegetation

Most forest stands in the Upper Coast Fork Willamette Watershed are currently in early- or mid-seral stages. Approximately 15.2% of the federal forested land in the watershed is in a late-successional condition.

Over the past decade, the entire Garrouite Creek drainage has been heavily harvested, creating a mosaic of recent clearcuts and young stands with only a few very small patches of late-successional forest in the drainage. There are recent clearcuts on privately owned industrial forest lands to the east, west, northeast, and southeast of the project area. To the south and northwest of the project area on BLM land are stands of timber contiguous with that of the project area. Four "Plus" trees from the Eugene District Tree Improvement program are located adjacent to the project area south of Road 23-3-17.

To the east of the south end of the project area is an approximately 4-acre stand that is residual

from previous partial harvesting. This stand is medium stocked, approximately 98 years old, and is made up of Douglas-fir, western redcedar, western hemlock, and incense cedar.

The project area is composed of a 59-year-old second-growth stand which regenerated naturally from seed trees left after logging in 1945. The seed trees appear to have been felled in the 1960s for fire prevention purposes. The stand has a well-stocked to overstocked Douglas-fir overstory with a minor component of western hemlock. The average diameter is approximately 14 inches. There are approximately 225 TPA. Because much of the proposed treatment area is of high density, it may be susceptible to windthrow after treatment.

Suppression mortality is occurring as evidenced by many small diameter snags and down trees. Western hemlock regeneration varies from light to moderate. Scattered areas of large coarse woody debris and scattered large snags with missing tops remain from the original stand but are sparse. Understory vegetation is dominated by salal, swordfern, and Oregon-grape.

The project area is within Connectivity/Diversity Block 232-49 of the Matrix Land Use Allocation but is not part of the 25-30% of the Connectivity/Diversity Block that is to be managed for late-successional forest characteristics.

Wildlife (including Special Status and Special Attention Species)

The project area is located within the home range of the Dennis Hambrick and the Scorpion Butte spotted owl sites. Habitat for both sites is already below the incidental take threshold (40% habitat within the home range radius). The Alton Hill stand most likely functions as foraging habitat for both sites; the stand has the habitat to support prey species including a closed canopy, large trees and snags, and some downed wood.

The project area also provides dispersal habitat for non-resident spotted owls and is within the South Willamette/North Umpqua Area of Concern. The area of concern provides a "bridge" for dispersal between the Cascades and Coast Range provinces. Currently 45% of the area of concern on the Eugene District consists of young plantations under 40 years old; 40% is dispersal habitat between the ages of 40-79 years old, some of which can be used for roosting and foraging by resident owls; and 15% is suitable spotted owl habitat defined as 80 years old or greater.

Elk and deer are known to reside in the area and most likely use the stand for shelter and protection. Birds that require a closed canopy may be nesting in the stand. Some small mammal species and salamander species that require an abundance of snags and downed wood and a moist microclimate may be residing in the stand as well.

Survey and Manage/Protection Buffer Species

Red tree vole surveys were completed during the spring of 2000. Five red tree vole nest trees were located in a small area just south of existing Road no. 23-3-18.

The project area is suitable habitat for three of the four Survey and Manage species present on the Eugene District; *Megomphix hemphilli*, *Prophysaon coeruleum*, and *Prophysaon dubium*. Protocol surveys for these three species were completed during the spring of 1999. Ten mollusk sites were located within the project area, 9 with *M. hemphilli* and one with both *M. hemphilli* and *P. coeruleum*. Three sites are within the untreated portions of Riparian Reserves. Seven are within Matrix or the treated portions of Riparian Reserves, as defined in the Proposed Action and Alternative A.

Surveys for Survey and Manage/Protection Buffer fungus species were conducted during the fall of 1999 and spring of 2000. A total of 13 sites were found, including one of *Sarcosoma mexicana*, and 12 of *Otidea onotica* and unidentified *Otidea*.

Four populations of *Ulota megalospora*, a Protection Buffer moss, were found within the proposed

harvest area.

Aquatic and Riparian Resources and Fisheries

The elevations in the project area range from approximately 1350 to 1700 feet. The project area is entirely within rain-dominated zones. Approximately ½ of this project area would be within the lower elevations of what is generally considered to be the transient snow zone.

Eight streams (1-3, 5-9) and two seeps (23 and 24) were identified within or immediately adjacent to the proposed harvest area. Streams 6, 7, 8 and 9 drain north and northeast to Stream 12 (Blood Creek). Stream 12 drains southeast to northeast to Stream 25 (Garoutte Creek). Streams 1, 3 and 5 drain east to southeast to Stream 25. Stream 2 drains south to southeast to Stream 14, which drains to Stream 25.

Stream 12 (Blood Creek) is within the project area but out of the proposed harvest area.

Streams 10, 11, 13, 18, and 19 are located within the project area where they join Stream 12. The Riparian Reserves for these streams may become part of the Stream Channel Enhancement project where they overlap with the Riparian Reserve for Stream 12.

Seven streams (14, 15, 16, 17, 20, 21, and 22) are located outside of the project area. These streams drain toward Stream 25. None of these streams have Riparian Reserves that are within the project area. No wetlands have been found within the project area.

Brauti Creek is located approximately 700-1000 feet to the south and southeast of the project area, and flows into Stream 25.

There are no listed water rights for the streams affected by the Proposed Action or Alternative A.

There are no fish-bearing streams within the proposed harvest area. Streams in the proposed harvest area lack suitable habitat or are too steep for fish to migrate. However, surveys detected cutthroat trout (*Oncorhynchus clarki*) within Stream 12; in Stream 25; and in Brauti Creek. Rainbow trout (*O. mykiss*) were also detected in Brauti Creek.

The lower portion of Brauti Creek is low gradient, rich in gravels and abundant in large woody debris. The stream is prime rearing and spawning habitat for cutthroat and rainbow trout. Habitat is primarily riffles, pools and glides. The lower 3500 feet of Brauti Creek flows through BLM-managed lands while the remainder of the reach to the south is primarily on private ownership.

Stream 25 (Garoutte Creek) is also ideal spawning and rearing habitat for cutthroat and rainbow trout. Rich in gravels and with a moderate amount of large woody debris, habitat is primarily riffles, pools and glides. A large percentage of Stream 25 is located on private ownership.

All non-fishbearing streams in or near the project area that are located on BLM-managed lands appear to be functioning properly in relation to their biological, chemical, and physical processes. These upland streams are providing the energy and nutrient resources for resident aquatic biota and for downstream fish communities. Most of the streams have a low to moderate amount of large woody debris within their systems, one of the key limiting factors for these aquatic environments. Most of the streams in or near the project area are well-shaded by a young second-growth conifer/hardwood stand.

The Cottage Grove Lake/Big River Watershed Analysis recommends the restoration of aquatic habitat conditions through placement of large wood in stream channels. (Cottage Grove Lake/Big River Watershed Analysis, Chapter 4, pages 7-8.)

Botany

No threatened, endangered, or protected plant species were found in 1997 vascular plant surveys. Three fungi of botanical interest were discovered outside of the proposed harvest area.

V. DIRECT AND INDIRECT EFFECTS

The Proposed Action and alternatives would have environmental effects. However, none of the alternatives would have effects beyond those described in the RMP EIS and the NSO FSEIS. Impacts based upon site specific analysis of the alternatives are described below.

A. UNAFFECTED RESOURCES

The following resources are either not present or would not be affected by any of the alternatives: Areas of Critical Environmental Concern, prime or unique farm lands, floodplains, Native American religious concerns, solid or hazardous wastes, Wild and Scenic Rivers, Wilderness, minority populations, and low income populations.

B. PROPOSED ACTION

ISSUE 1: ACS Objectives

The Proposed Action includes management within Riparian Reserves that promotes attainment of ACS objectives. Site-specific conditions in this project area are consistent with the general discussion in the Cottage Grove Lake/Big River Watershed analysis, which identified management opportunities for projects in Riparian Reserves. That analysis specifically addressed density management treatments in stands where thinning would promote faster development of large trees with fuller crowns, and dropping trees on site to increase the large woody debris immediately available to the riparian system. (Cottage Grove Lake/Big River Watershed Analysis, Chapter 4, pages 4-5). The following is a site-specific analysis of the effect of the Proposed Action on attainment of the ACS objectives:

Objective 1: The Proposed Action would maintain and contribute to the restoration of the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted. Treatment of the outer 100 feet of the Riparian Reserves would hasten the development of late-successional structural characteristics in the residual stand, such as larger diameter trees and canopy layering, by lessening competition.

Objective 2: The management activities in the Riparian Reserves would maintain spatial and temporal connectivity within the watershed because of the influence of the residual stand and the untreated portions of Riparian Reserves. New road construction would not alter the existing drainage network because there would be no stream crossings and roads would be 200 feet from streams.

Objective 3: The Proposed Action would maintain the physical integrity of the aquatic systems because the residual stands in areas thinned would maintain root strength; the untreated portions of Riparian Reserves would ensure that thinning would not affect streambank integrity; and management activities throughout the project area would not cause any alteration in water flows that could affect channel morphology because the unthinned buffers would filter potential sediments before they reach the streams.

Objective 4: The Proposed Action would maintain water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. The Proposed Action would not alter stream temperature because the untreated portions of Riparian Reserves adjacent to the streams would maintain existing shading of streams.

Objective 5: The Proposed Action would contribute toward the restoration of the sediment regime under which this aquatic ecosystem evolved. The untreated portions of Riparian Reserves would adequately filter any sediment from the uplands before it reaches the stream because of the generally gentle topography, the low risk of hillslope erosion, and the low risk of substantial sediment inputs from upland areas. Trees felled for large woody debris into or near stream channels would create an immediate supply of large woody debris, and thinning in Riparian Reserves would speed the development of a future supply of larger woody debris. The immediate and future supply of woody debris to the streams would also help restore the sediment regime.

Objective 6: The Proposed Action may contribute to a minor increase in peak flows, summer low flows, and overall water yield because of the removal of trees and the construction of roads and landings. The exact extent of the effect on flow is not certain; most research on hydrologic response to timber harvesting has been conducted in clearcuts, and the effect of density management treatments on stream flows has not yet been extensively studied. However, any effect is likely to be negligible and last only for a few years because of the effect of the residual stand, and because new roads would not noticeably change the routing of water or add to overland flow.

Objective 7: The Proposed Action would maintain existing patterns of floodplain inundation and water table elevation because it would have little effect on existing flow patterns and stream channel conditions.

Objective 8: The Proposed Action would contribute to the restoration of the species composition and structural diversity of the canopy in the riparian zone by speeding the development of large trees and layered understory canopies within the Riparian Reserves. The Proposed Action would cause a reduction in canopy closure for 10-20 years in the thinned areas, which could result in some micro-climatic alteration, non-native plant colonization, or other adverse effects for species that prefer complete canopy closure or that do not tolerate disturbance. Any such effect would be buffered by the effect of the residual trees and nearby untreated reserve areas.

The Stream Channel Enhancement proposal would create an immediate supply of coarse woody debris within the riparian zone, and thinning in Riparian Reserves would speed the development of a future supply of large woody debris, which would maintain and contribute to the restoration of the physical complexity of the aquatic system.

Objective 9: The Proposed Action would contribute to the restoration of habitat to support well-distributed populations of some riparian-dependent species by providing an immediate supply of woody debris to the streams. This would help restore the deposition of gravels and the formation of deep pools, back-water and off-channel aquatic habitat.

Based on the above analysis of the effect on attainment of the ACS objectives, the Proposed Action is consistent with the ACS and the objectives for the Riparian Reserves, and would contribute to the process of riparian recovery in the watershed.

ISSUE 2: Effects on Spotted Owl Dispersal Habitat

The Proposed Action may affect and is likely to adversely affect spotted owls. The amount of suitable and foraging habitat within the Dennis Hambrick and Scorpion Butte sites' home ranges is presently below the incidental take threshold. The Proposed Action would degrade foraging habitat for both sites by opening up the canopy to approximately 60% canopy closure, and possibly felling snags and disturbing the downed wood affecting the prey species. As the stand grows and the canopy closes, foraging habitat would improve.

The prescription would maintain canopy closure above 40%, maintaining dispersal habitat. However, it would be degraded because the canopy would be opened. Effects to the Area of Concern are negligible.

ISSUE 3: Winter Logging/Road Density and Rocking

If the Purchaser elects to rock the roads, the increase in permanent rocked roads would increase road density, decrease habitat, increase the vulnerability of big game to hunters, and possibly divide populations of small species. A rocked road would permanently fragment the stand and reduce the amount of interior forest habitat, negatively affecting interior forest species. Human use of roads can disturb species and disrupt nesting, denning, and calving attempts. However, if roads are rocked, winter logging would be available, possibly decreasing the overall time of disturbance caused by noise from logging and use of roads, and possibly avoiding work in the spring and summer during the breeding season.

Road construction as detailed in the Proposed Action would compact an area of approximately 1 acre. If newly constructed roads were to be rocked, compaction would be permanent. If newly constructed roads are not rocked, compaction would last until completion of operations (no more than 3 years), at which time the roads and landings would be subsoiled.

If roads remain unrocked, establishing waterbars between logging seasons would minimize erosion. Because of the moderate topography in the proposed road locations, slope stability problems are very unlikely.

ISSUE 4: Impacts to Native Plant Species

The density management thinning as described under the Proposed Action would open the stand and some ground disturbance would occur during yarding. Ground disturbance such as compaction and topsoil displacement usually temporarily set back native herbaceous communities and promote the spread of weedy non-native plants. Negative impacts to underground fungal resources are also documented. If roads are rocked, habitat for vascular and non-vascular species would be eliminated on approximately one acre.

More light and drying winds would enter the stand, as compared to current conditions. This would change the microclimatic factors that support forest floor native herbs and would increase the likelihood that non-native species could enter the unit. It is likely that some destruction of habitat for nonvascular plant species would occur in trees harvested. However, some beneficial effect for the same species would occur in unharvested trees as the crowns develop the complex structure more typical of late-successional stands.

Road construction machinery could potentially introduce noxious weeds into the unit by transporting seeds from weed-infested areas, while creating the soil disturbance that invites quick-colonizing non-native species. Scotchbroom could be expected to spread into the new roads and landings. However, it would not be expected to move into the interior of the unit because there would not be sufficient light reaching the forest floor through the residual stand.

ISSUE 5: Impacts to Known Sites of Survey and Manage/Protection Buffer Species

The 10-acre reserve around the cluster of red tree vole nest trees, together with the buffering effect of the residual stand in the surrounding harvested area and the connection to Riparian Reserves, is expected to provide adequate protection to the known sites. The 10-acre reserve would protect the trees from damage during harvest activities and maintain the forest canopy surrounding the nest trees. In addition, disturbance from noise would be minimal because of the buffering effect of the trees in the 10-acre reserve.

Based on information in the management recommendations for the two mollusk species known to exist in the project area (BLM - Instruction Memorandum No. OR-2000 -15 (Expires 09/30/2001) "Survey and Manage Management Recommendations for Four Terrestrial Mollusks: *Cryptomastix devia*, *Megomphix hemphilli*, *Prophysaon coeruleum*, and *P. dubium*." November 23, 1999.), the 1/4-acre buffers around each known mollusk site would be expected to provide adequate

protection to the sites by avoiding mechanical damage and by maintaining shade. Standard timber sale contract terms do not allow falling of timber into the reserves. Therefore, no disturbance to the 1/4-acre reserves is expected.

Similarly, the 1/4-acre reserves around the *Sarcosoma* and *Otidea* known sites would provide adequate protection of the sites. For *Sarcosoma*, no management recommendations exist; however, the Northwest Forest Plan states that management of known sites should emphasize protecting the duff layer where the species is found. For *Otidea*, management recommendations call for protecting the microclimate of the site (BLM - Instruction Memorandum OR-98-003, "Management Recommendations for Survey and Manage Fungi, Version 2.0", and "Draft *Otidea onotica* Protection Buffer rationale for the Eugene District", May 1, 2000). In both cases, the 1/4-acre buffers are expected to maintain these habitat elements for the species.

C. ALTERNATIVE A

ISSUE 1: ACS Objectives

Alternative A includes the same management actions within Riparian Reserves as the Proposed Action, along with a regeneration harvest of the uplands. The following is a site-specific analysis of the effect of Alternative A on attainment of the ACS objectives:

Objective 1: Alternative A would not prevent or retard restoration of the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted. Treatment of the outer 100 feet of the Riparian Reserves would hasten the development of late-successional structural characteristics in the residual stand similar to the Proposed Action.

Objective 2: Alternative A's effects on Objective 2 would be similar to the Proposed Action.

Objective 3: Alternative A would not prevent or retard restoration of the physical integrity of the aquatic systems because the residual stands in areas thinned would maintain root strength; the unthinned buffers would ensure that thinning would not affect streambank integrity; and management activities throughout the project area would not alter water flows enough to affect channel morphology.

Objective 4: Alternative A's effects on Objective 4 would be similar to the Proposed Action.

Objective 5: Alternative A's effects on Objective 5 would be similar to the Proposed Action. Although Alternative A would include regeneration harvest in the uplands, the untreated buffers would still adequately filter any sediment from the uplands before it reaches the stream because of the generally gentle topography, the low risk of hillslope erosion, and the low risk of substantial sediment inputs from upland areas.

Objective 6: Alternative A may cause a greater increase in summer low flows, overall water yield, and peak flows than the Proposed Action. The removal of more overstory could result in higher soil moisture levels, a greater reduction in evapotranspiration and interception rates, and increased snow accumulation and snow melt with rain-on-snow events.

Objective 7: Alternative A's effects on Objective 7 would be similar to the Proposed Action.

Objective 8: Alternative A would contribute to the restoration of the species composition and structural diversity of the canopy in the riparian zone in a manner similar to the Proposed Action. Alternative A would cause a reduction in canopy closure similar to the Proposed Action. However, in conjunction with the regeneration harvest of the uplands, this could result in micro-climatic alteration, non-native plant colonization, or other adverse effects to a greater extent than the Proposed Action. Any such effect would be buffered by the effect of the residual trees and nearby untreated reserve areas.

The effect of trees felled for large woody debris into or near stream channels would be similar to the Proposed Action.

Objective 9: Alternative A's effects on Objective 9 would be similar to the Proposed Action.

Based on the above analysis of the effect on attainment of the ACS objectives, Alternative A is consistent with the ACS and the objectives for the Riparian Reserves, and would contribute to the process of riparian recovery in the watershed.

ISSUE 2: Effects on Spotted Owl Dispersal Habitat

A regeneration harvest would remove foraging habitat for the Dennis Hambrick and Scorpion Butte owl sites, adversely affecting them. The loss of foraging habitat would lower both owl sites even further below the incidental take threshold. Density management in the Riparian Reserves would degrade foraging habitat for several decades. For the future, the density management treatment is expected to accelerate tree growth.

The harvest would remove dispersal habitat in a township already low in spotted owl dispersal habitat. Although a regeneration harvest would not have a large effect on the Area of Concern as a whole, it would negatively affect this southern portion of the Area of Concern.

ISSUE 3: Winter Logging/Road Density and Rocking

The effects would be similar to the Proposed Action.

ISSUE 4: Impacts to Native Plant Species

Under Alternative A, there would be more microclimatic shifts related to soil and air moisture, winds, and temperature as compared to the Proposed Action. There would be a greater likelihood that nonnative plant species and noxious weeds would colonize the unit. There would be a change in the genetic makeup of the dominant canopy species, as replanting would occur with genetically improved Douglas-fir, rather than a gradual closure of the canopy from the naturally regenerated stand that currently exists.

The risk of scotchbroom infestation would likely be greater under this alternative because of the increased sunlight available after a regeneration harvest. It would be likely that scotchbroom would spread into the proposed harvest area itself, not just along the roads.

ISSUE 5: Impacts to Known Sites of Survey and Manage/Protection Buffer Species

The 10-acre reserve around the red tree vole nest sites and the 1/4-acre reserves around mollusk and fungi known sites, together with the effect of nearby and adjacent Riparian Reserves, would provide some protection, similar to the Proposed Action. However, the protection would be somewhat less than the Proposed Action, because Alternative A would lack the buffering effect of the residual stand in the harvested areas.

D. ALTERNATIVE B (NO ACTION)

ISSUE 1: ACS Objectives

Alternative B includes no management within Riparian Reserves. Alternative B would maintain existing trends. Alternative B would not retard attainment of Objectives 2, 3, 4, 5, 6, and 7. Riparian conditions would continue to respond to existing processes, with some recovery of aquatic habitat expected over time.

Objective 1: Alternative B would not hasten the development of late-successional characteristics in the Riparian Reserves as the Proposed Action and Alternative A would. Since there are some larger trees (up to 20 inches dbh) in the riparian area to provide potential habitat, recovery of stream channel habitat is expected to proceed at a more rapid rate than in streams where larger

trees are lacking, but still at a substantially slower rate than with one of the action alternatives.

Objective 8: Alternative B would not have the immediate supply of large woody debris felled into the streams that would occur with either action alternative.

Objective 9: Alternative B would not have the benefit of an immediate supply of woody debris to the streams to help restore the deposition of gravels and the formation of deep pools, back-water and off-channel aquatic habitat that would occur with either action alternative.

Based on the above analysis of the effect on attainment of the ACS objectives, Alternative B would not prevent attainment of any of the ACS objectives, but would retard attainment of objectives 1, 8, and 9 relative to the action alternatives.

ISSUE 2: Effects on Spotted Owl Dispersal Habitat

Alternative B would maintain and not degrade foraging habitat for the Dennis Hambrick and Scorpion Butte owl sites. It would maintain and not degrade spotted owl dispersal habitat.

ISSUE 3: Winter Logging/Road Density and Rocking

Alternative B would not increase road density or fragmentation, nor decrease interior forest habitat.

ISSUE 4: Impacts to Native Plant Species

The No Action Alternative would have no direct effects on native plant species. Development of late-successional characteristics in the stand would continue but would be much slower than as described for the Proposed Action because of the high density and suppression.

ISSUE 5: Impacts to Known Sites of Survey and Manage/Protection Buffer Species

The No Action Alternative would result in no change in conditions at the known sites of red tree voles, mollusks, and fungi. It is unknown to what extent the high stand density and eventual tree suppression would effect these species.

E. CUMULATIVE EFFECTS

This analysis incorporates by reference the analysis of cumulative effects in the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (NSO FSEIS) (Chapter 3 & 4, pp. 4-10), the RMP EIS (Chapter 4), and the Schedule Change EA. Those documents analyze most cumulative effects of timber harvest and other related management activities. None of the alternatives analyzed here would have cumulative effects on soils or air quality beyond those effects analyzed in the above documents. The following section supplements those analyses, providing site-specific information and analysis particular to the alternatives considered here.

It is likely that other stands on BLM-administered lands in the Cottage Grove Lake/Big River Watershed will be treated with density management or regeneration harvests within the next five years, given that the sections to the north, south and immediate east are Connectivity. The BLM-managed sections in the watershed beginning approximately 4 miles to the east are LSR. For Fiscal Years 2000-2003, approximately 1300 acres within the watershed will be analyzed for treatment. Timber sales that have occurred within the past 5 years in the watershed include Black Butte Thinning (23-3-9, completed in 1998).

On private lands in the watershed, more intensive timber management actions, including clearcutting and broadcast burning, are occurring and are likely to continue. Also, it is possible

that some forest stands on private land will be converted to non-forest land, for either agricultural or residential use. Private lands provide habitat for deer, elk, and neotropical birds but will primarily alternate between early- to mid-seral stages.

In the short term (approximately 10-40 years), the Proposed Action and other harvest activities in the area would contribute to the degradation or elimination of habitat for species preferring heavy canopy cover stands. Spotted owl foraging habitat and dispersal habitat would be degraded. Species preferring heavy canopy cover (i.e., certain forest birds and small mammals) would be displaced and concentrated into smaller, fragmented suitable habitat that may be already occupied. In the long-term (40 plus years), the Proposed Action and other thinnings in the watershed could accelerate the development of mature and late-successional forest characteristics.

The majority of the private harvests in the area have been clear cuts; consequently, dispersal habitat for spotted owls within the township is low. The combination of past federal thinnings, planned thinnings and this project has and will cause degraded dispersal habitat; after treatment, habitat might be degraded for 10 - 20 years. Within the South Willamette/North Umpqua Area of Concern over the decade, however, the harvests are being offset by the growth of young forest stands into dispersal habitat. Between 1996 - 2004, the Area of Concern would gain a 9% increase in dispersal habitat if no harvests take place. If the planned harvests do occur, the Area of Concern would gain an 8% increase in dispersal habitat.

The U.S. Fish and Wildlife Service has determined that the Proposed Action is not likely to jeopardize the continued existence of the species.

There is incomplete knowledge about the distribution of red tree voles, the ability of individuals and populations to disperse, and their ability to tolerate disturbances such as timber harvest. The species has been found in low numbers in second-growth forests and in disturbed environments, such as adjacent to existing roads. Based on this experience, it is possible that populations of this species would persist after partial timber harvests, but they would be unlikely to persist after clear cuts on adjacent private land.

Mollusk surveys were done in the Spring of 1999. Within the Willamette Province portion of the South Valley Resource Area, five project areas were surveyed in 1998 resulting in the discovery of 98 *Megomphix hemphilli*, 23 *Prophysaon coeruleum*, and 5 *Prophysaon dubium*; four project areas were surveyed in 1999 resulting in the discovery of 110 *Megomphix hemphilli*, 18 *Prophysaon coeruleum*, and 10 *Prophysaon dubium*. Total numbers at the nine project areas were 208 *Megomphix hemphilli*, 41 *Prophysaon coeruleum*, and 15 *Prophysaon dubium*. *Megomphix hemphilli* snails were found at seven of the project areas in moderate numbers. *Prophysaon coeruleum* were found at eight project areas in low numbers and *Prophysaon dubium* were found at six project areas in low numbers; these species appear to be fairly well distributed across the resource area. In both the Coast Range and the Cascade foothills of the Eugene District, we have observed that releasing bigleaf maples by reducing the number of conifers ultimately favors the associated mollusk fauna. Populations of these mollusks are known to have survived disturbances such as thinning and regeneration harvests. The Proposed Action and Alternatives A & B, together with other federal harvests, are not expected to pose a risk to local viability or distribution of the three mollusk species because sites will be protected in riparian reserves and through the management recommendations. Private harvests most likely will cause population declines due to the low amount of downed wood left and the size of the riparian buffers.

Little is known about the ecology and life cycle of *Sarcosoma mexicana*, a species of winter-fruiting fungus. At the writing of the Northwest Forest Plan, *S. mexicana* was thought to occur in deep conifer litter layers in older forests. However, from its occurrence in disturbed, compacted soils and second-growth forests, it can be deduced that *S. mexicana* can either survive or re-establish

into the kind of environment caused by timber harvest, road construction, burning, and (in one known case) plowing. Based on this experience and the analysis presented in the Schedule Change EA, it is possible that populations of this species would continue to persist in this and other nearby stands after timber harvest. Additionally, it is possible that timber harvest without any protections for this species, such as will occur on non-federal land, may not even result in the loss of populations, limiting the potential for cumulative effects on this species.

Little is known about the ecology and life cycle of *Otidea* species, but the species have been found in second-growth forests. Based on this experience and the analysis presented in the Schedule Change EA, it is likely that populations of these species would continue to persist in this and other nearby stands after timber harvest.

The Proposed Action, together with other harvesting, could cause a minor increase in water flows and overall water yield within the watershed. If roads were to be rocked, the Proposed Action could contribute to an increase in road density (0.29 miles). At the time the Cottage Grove Lake/Big River Watershed Analysis was completed (in May 1997), there were 850 miles of road in the watershed. Watershed Analysis recommendations were to minimize the number of new permanent roads, and to design and construct new roads so that delivery of sediment to streams is kept to a minimum. (Cottage Grove Lake/Big River Watershed Analysis, page 4-2.)

It is possible that this stand would be subject to a regeneration harvest in 20-50 years, under the Proposed Action and No Action alternatives. By deferring regeneration harvest now, the stand could have several more decades to develop into mature or late-successional forest, which is limited in the immediate area. The stand could thus provide refugia for late-successional forest associated species during the decades prior to final harvest.

Together with private harvests and other federal regeneration harvests, Alternative A would contribute to the loss of foraging and dispersal habitat within the Area of Concern. It would cause the loss to be greater than what was analyzed during consultation with the U.S. Fish and Wildlife Service.

Alternative A would contribute to a dominance of early- and mid-seral stages in the watershed. Species that prefer early seral stages would be able to use the harvest area, but other species would be extirpated or excluded. Alternative A would have cumulative effects on water resources similar to the Proposed Action, but of slightly higher magnitude.

Alternative B would not add to the cumulative effects of other harvests in the area. Development of late-successional characteristics would continue slowly because of the stand's high density and suppression.

F. MITIGATION MEASURES

The Fish and Wildlife Service has authorized taking of northern spotted owls that is incidental to this proposed Action. To minimize any take, the Service believes that it is necessary and appropriate to prevent disturbance to spotted owl pairs and their progeny during the nesting season. To implement this reasonable and prudent measure, the Service provided the following non-discretionary terms and conditions: prohibit timber harvest activities within 0.25 miles of an active nest site during the nesting season, from March 1 to June 30 (or later if deemed necessary by the BLM biologist); and report on the progress of the activities described in the Biological Opinion.

VI. CONSULTATION AND COORDINATION

A. LIST OF PREPARERS

The proposed action and alternatives were developed and analyzed by the following interdisciplinary team of BLM specialists.

Jeff Apel	Engineering
Alison Center	Threatened and Endangered Wildlife Species
Alan Corbin	Timber Management
Richard Hardt	Ecology
Pete O'Toole	Silviculture
Mike Southard	Cultural Resources
Steve Steiner	Hydrology
Chuck Vostal	Fisheries
Molly Widmer	Botany
Barry Williams	Soils

B. CONSULTATION

Pursuant to the Endangered Species Act, formal consultation was completed with the U.S. Fish and Wildlife Service (USFWS) on this proposed action, along with other actions proposed in the Eugene District for Fiscal Year 1999. The USFWS issued a Biological Opinion on September 29, 1998.

No candidate, proposed, or listed threatened and endangered fish species under the Endangered Species Act exist in the Big River/Cottage Grove Lake Watershed. Consultation with the National Marine Fisheries Service is not necessary.

The State Historic Preservation Office (SHPO) has been notified of this proposal and has determined, in accordance with 36 CFR 800.5(b), that the proposed undertaking would have no effect on cultural resources.

The Confederated Tribes of the Siletz and the Confederated Tribes of the Grand Ronde were notified of this project during the scoping process, requesting information regarding tribal issues or concerns relative to the project. No response was received.

C. PUBLIC PARTICIPATION

A public notice advertising the availability of the June 1999 EA and preliminary FONSI appeared in the Eugene Register-Guard on June 23, 1999. Additionally, the June 1999 environmental assessment was sent to the following list of groups, agencies and individuals.

A public notice advertising the availability of this EA and preliminary FONSI appeared in the Eugene Register-Guard on June 28, 2000. Additionally, this environmental assessment was sent to the following list of groups, agencies and individuals.

Ann Mathews, Eugene, OR
Carol Logan, Kalapooya Sacred Circle Alliance, Springfield, OR
Charles and Reida Kimmel, Eugene, OR
Confederated Tribes of the Siletz, Siletz, OR
Confederated Tribes of the Grand Ronde, Grand Ronde, OR
Craig Tupper, Eugene, OR
David Simone, Eugene, OR
George Sexton, American Lands Alliance, Eugene, OR
Governor's Forest Planning Team, Salem, OR
Harold Schroeder, Eugene, OR

Jan Wroncy, Eugene, OR
John Bianco, Creswell, OR
John Poynter, Lorane, OR
Kris and John Ward, Eugene, OR
Lane County Land Management, Eugene, OR
Neal Miller, Eugene, OR
Oregon Dept. of Forestry, Springfield, OR
Oregon Dept. of Fish and Wildlife, Springfield, OR
Oregon Dept. of Environmental Quality, Portland, OR
Oregon Natural Resources Council, Eugene, OR
Pam Hewitt, Marcola, OR
Peter Saraceno, Eugene, OR
Robert Davison, Wildlife Management Institute, Bend, OR
Roseburg Forest Products, Roseburg, OR
Sierra Club - Many Rivers Group, Eugene, OR
Sondra Zemansky, Junction City, OR
Swanson-Superior Forest Products, Inc., Noti, OR
The Pacific Rivers Council, Eugene, OR

A 30-day public comment period for this EA closed on July 28, 2000. No comments were received.

A 30-day public comment period for the June 1999 EA closed on July 23, 1999. One letter was received from Nicole Czarnomski, Oregon Natural Resources Council, Eugene, Oregon.

The paragraphs below summarize the public comments and the response to the comments. Comments addressed five major categories: (1) roads; (2) NEPA documentation; (3) forest, soil and watershed protection; (4) species; (5) water quality issues; and (6) economics.

Roads

Comment: No new roads. The existing road density is too high. Even with plans to decommission new stretches of road, they could still be used by ORVs and smaller vehicles. Do not rock the newly constructed roads.

Response: Access to the proposed project area is controlled by a locked gate on road No. 21-3-5. The likelihood of subsoiled roads being used by off-road vehicles is low. If the road were rocked, it would increase road density in the watershed by less than 0.01% (see page 16).

Comment: Construction of new roads disrupts subsurface water flow. Roads should not be built in order to protect the soils and the hydrologic functioning of this watershed.

Response: No impacts to subsurface water flow are anticipated. Analysis of the Aquatic Conservation Strategy objectives indicates that the Proposed Action would contribute to the process of riparian recovery in this watershed. The EA has been clarified regarding this subject (see page 10).

Comment: No roads should be built in areas of steep slopes.

Response: No road construction is proposed in areas of steep slopes. Road locations are predominantly ridgetop roads on gentle to moderate topography.

NEPA Documentation

Comment: Cumulative impacts are significant enough that they should be taken into greater consideration. Issues that deserve more emphasis include the degradation of habitat, such as the severe loss of habitat for the northern spotted owl. There is not enough discussion of the impacts that tractor logging will have on the management area. Previous and future planned harvests in this watershed should be listed in the EA; they were not available to the public.

Response: Cumulative impacts to spotted owl habitat are discussed on pages 14-15. The proposed project area is owl dispersal habitat. The cumulative effects analysis states that the impacts of harvests in dispersal habitat are being offset by the growth of younger forests into dispersal habitat. Ground-based yarding is discussed below. Previous harvests and acres of reasonably foreseeable future treatments are discussed on page 14.

Comment: Alternatives that would preserve more habitat, build less roads, and preserve healthy stream buffers should be considered in the EA, such as the alternative to use only prescribed fire to treat the area.

Response: The suggested alternative to use prescribed fire to reach desired stand conditions was not considered in detail. See page 6 for more rationale.

Comment: There are no options for a restoration alternative to discuss non-harvest forest treatments.

Response: True. However, we did consider and adopt restoration activities. The Proposed Action and Alternative A both contain restoration design features. See pages 3-5.

Comment: Reaching the timber target is not the number one goal of the Northwest Forest Plan and should not be treated as so. According to the Northwest Forest Plan, harvests within areas specified for habitat protection will be greatly curtailed.

Response: Over the past five years we have greatly curtailed timber harvest from what it was before the Northwest Forest Plan. The proposed project area is in the Matrix land use allocation, in which the Northwest Forest Plan expected most timber harvest would occur. As noted on page 1, the Proposed Action is in conformance with the Eugene District RMP, which includes the standards and guidelines from the Northwest Forest Plan.

Forest, Soil, and Watershed Protection

Comment: If a unit must be commercially thinned, that should be the only and final entry into that site. This site has already been precommercially thinned, as well as harvested in the past. The one entry has already occurred, it is now time to let the forest recover.

Response: The project area lies within the Matrix land use allocation. The Northwest Forest Plan anticipated that timber harvests would occur within this land use allocation on a sustained yield basis. Density management is designed to accomplish multiple objectives, some related to restoration. We think that action will promote recovery faster than no action. As noted in the EA, it is possible, but not guaranteed, that this area would be subject to a regeneration harvest in 20-50 years. This is consistent with the Matrix land use allocation.

Comment: There is no discussion of old-growth in the EA. The EA is not complete. It is critical to leave all old-growth standing.

Response: The EA discusses the general location of nearby late-successional forest and the amount of late-successional forest in this watershed (pages 6-7). No late-successional or old-growth timber would be harvested under the Proposed Action or Alternative A.

Comment: Activities in areas near streams and other waterways can cause detrimental effects to water quality. More thorough study of this situation and the impacts on fish species must be completed. Avoid activities in riparian areas unless needed to obtain ACS objectives.

Response: The ACS analysis (see pages 9, 10, 12-14) indicates that water quality would not be affected by any of the alternatives. In addition, the analysis concludes that the Proposed Action would contribute to the process of riparian recovery in the watershed. The EA has been clarified regarding this point (see page 10).

Comment: Avoid ground-based logging, especially in riparian reserves.

Response: Ground-based yarding was inadvertently omitted from the Proposed Action and Alternative A. However, the EA has been changed to reflect that ground-based yarding would be part of the Proposed Action and Alternative A (page 5).

The interdisciplinary team considered allowing ground based yarding in this area and concluded that by following the BMPs listed in the RMP, ground-based yarding would not cause any effect greater than that analyzed in the RMP. Due to the retention trees that would be left with implementation of the Proposed Action, the fact that there would be no ground-based yarding within the Riparian Reserves (200 feet of any stream), and the undisturbed vegetation within 100 feet of any stream, ground-based yarding would not prevent or retard attainment of any of the ACS objectives.

Comment: Some of the soils in this project area have a high erosion potential. Using ground-based equipment, harvesting trees, and the use of prescribed fire can cause adverse impacts to soil. More consideration should be given to these forest-altering practices.

Response: The predominant soils in the proposed project area include Peavine, Cumley, Preacher, and Klickitat. Water erosion ratings from the Lane County Soil Survey (USDA Natural Resource Conservation Service) for exposed bare soils range from slight to moderate. No broadcast burning is proposed under either action alternative, and Best Management Practices included in the design features of the action alternatives are capable of mitigating any erosion potential. This information has been included in the EA for clarification.

Comment: Timber harvest and log hauling can promote the spread of noxious weeds throughout the project area. Avoidance and mitigation efforts must be used to prevent spread of noxious weeds. The only real way to prevent the spread is to avoid all road building and entrance into the forest. No pesticides should be used.

Response: While it is true that timber harvesting equipment can be vectors for the spread of noxious weeds such as scotch broom, wild animals, recreational traffic, wind and rain can also spread them. As a result, it is impossible to totally prevent the spread of scotch broom. The Proposed Action and Alternative A both contain a design feature that is expected to minimize the spread of scotch broom into the unit (see page 5). No pesticide use would occur under either the Proposed Action or Alternative A.

Comment: The decision cannot be signed until the steps in the Region 6 FEIS for Managing Competing and Unwanted Vegetation and Mediated Agreement are completed.

Response: The FEIS and agreement referred to do not apply to BLM. No pesticide use is proposed under any of the alternatives described in this EA.

Comment: In the EA there is no discussion on the impacts of reducing connectivity corridors, and how it will affect species in the area.

Response: Impacts to connectivity are discussed under the ACS analysis, pages 9, 10, 12-14. Impacts to owl dispersal habitat within the project area are discussed on pages 10, 13 and 14. Impacts to owl dispersal habitat within the South Willamette/North Umpqua Area of Concern are discussed on page 15. No other concerns regarding habitat connectivity were identified.

Species

Comment: Red tree voles must be surveyed according to protocol. If the surveys are not completed, there is potential to destroy their habitat before coming to an understanding of their status in the project area. The November 4, 1996 memo is illegal and should not be followed.

Response: Red tree vole surveys have been completed (page 7).

Comment: The 32 survey and manage strategy two species and Protection Buffer species subject to the Schedule Change EA must be surveyed for before this project is implemented. The Record of Decision was inappropriately amended in violation of NEPA.

Response: The surveys for Survey and Manage strategy 2 and Protection

Buffer species have been completed (page 7). For seven fungi species, these surveys were "single season" surveys, consistent with the March 2000 BLM Plan Maintenance Documentation on the Decision to Delay the Effective Date for Surveying 7 "Survey and Manage" and "Protection Buffer" Species.

Comment: Without complete surveys, we may never find out which species will be impacted the greatest, nor whether or not they will be able to survive with the harvests done. Species such as the red tree vole and *Ulotia megalospora* could be greatly impacted by loss of habitat.

Response: Surveys for *Ulotia megalospora* discovered four populations. All four would be protected by retaining small clumps of trees surrounding each population (see page 3). See above regarding red tree voles. The five red tree voles found during surveys would have a reserve of at least 10 acres. The effects on red tree voles are analyzed on pages 11-14.

Comment: The NFP ROD says that buffers [for known sites of Survey and Manage strategy 1 species] will be on the order of tens of acres. "Explore" those alternatives (10 acres, 20 acres, 30 acres and so on). Any buffer less than 10 acres is probably not consistent with the ROD.

Response: Buffer sizes for the Survey and Manage mollusks found in the project area were determined by local professional expertise and utilizing Appendix J2 of the FSEIS of the Northwest Forest Plan. This represents the best knowledge to date regarding these species and their habitat needs. Alternatives that contain varying buffer sizes would not result in environmental impacts different from those already embodied in the No Action Alternative. There would be no additional known individuals protected as a result of the larger buffers, only additional potential habitat. Thus, there would be no basis for additional analysis not already part of the No Action Alternative.

Comment: Surveys must be conducted to determine if this project area contains habitat for bats. According to the ROD all voids and recesses in the earth large enough to fit a human must be surveyed for the presence of bats. Green tree and snag retention in the Matrix must also be adjusted to account for the needs of bats.

Response: Regarding surveys for bats, the NSO ROD standard and guideline states, "Conduct surveys of crevices in caves, mines, and abandoned wooden bridges and buildings for the presence of roosting bats..." (NSO ROD, page C-43). The reference to "crevices and voids large enough to fit a human" stems from the actual definition of a "cave" as used in the Federal Cave Resources Protection Act of 1988. During field reconnaissance of the proposed project area, no crevices or voids were found; therefore no specific surveys for bats were necessary. Bats do use snags, and snags which do not pose a safety hazard would be retained (EA page 4). Additional green tree retention would not be required under the Proposed Action, because it is a thinning. Under Alternative A, 2-3 additional green trees greater than 20 inches dbh would be retained for snag recruitment (EA page 5).

Comment: Habitat for northern spotted owls will be degraded by this

project. Now is the time to allow the forest to recover and create old-growth habitat to protect species such as the northern spotted owl.

Response: The EA states that spotted owl dispersal habitat would be maintained but degraded as a result of opening the canopy. Forest stands with canopy closure of 40% or greater are considered to be dispersal habitat. The Proposed Action would result in canopy closure of approximately 60%, well above the threshold for dispersal habitat. Thus, while the quality of dispersal habitat would be reduced, the stand would still function as dispersal habitat.

Comment: This area has already received classification as a "bridge" for the dispersal between the Cascades and Coast Range provinces. This classification makes it even more important to focus on the needs of the area to be intact.

Response: The comment refers to the larger area known as the South Willamette/North Umpqua Area of Concern. This area was identified by the US Fish and Wildlife Service as an area of concern because of its importance in providing dispersal habitat between the Cascades and Coast Range provinces. The area of concern is not intact now. We think action will cause the forest to grow more quickly into a condition that fulfills the "bridge" idea. As noted in the Cumulative Effects analysis (page 15), even with anticipated timber harvests, the amount of spotted owl dispersal habitat is expected to increase as stands age.

Water Quality Issues

Comment: The project area contains streams with populations of cutthroat and rainbow trout. Fish species are not present in any of the other streams for unknown reasons. Further erosion created from highly erodable soils, cable yarding in Riparian Reserves, and commercial thinning harvesting methods will further pollute the system and destroy the last remaining habitat for these species. A Supplemental EA must be done to discuss the threat to habitat that these practices will impose upon these species.

Response: Streams in the harvest area were not found to be fish-bearing because of their lack of habitat and steep gradient. The EA has been clarified (page 8). Impacts to fish habitat are discussed in the context of the ACS analysis, pages 9, 10, 12-13. Cutthroat and rainbow trout are common species found throughout the watershed.

Comment: An increase in sediment delivery is a possibility with proposed new road construction and harvesting. The project should include no harvesting or road construction that will impact the watershed in a harmful way.

Response: As shown in the ACS analysis, water quality would be maintained under the Proposed Action, and the likelihood of sediment reaching a stream is very low. The No Action Alternative describes a no harvesting or road construction scenario.

Comment: There is no discussion of intermittent streams and the importance of protecting habitat of those that exist in the EA.

Response: The hydrology report in the timber sale file shows that many of the streams in the project area are intermittent. Riparian Reserves for these streams and proposed treatments are described on page 4.

Economy

Comment: The economic benefits of this project are not discussed in this EA. A thorough discussion of economic impacts must be done before the project can continue or the public can make an appropriate decision on the benefits of this project.

Response: The Eugene RMP EIS contains a discussion of the economic impacts of the timber harvest program across the district. The EIS also recognizes that natural resources have values that do not generate measurable economic activity within markets. Non-market values include such things as scenic areas, water quality, recreation use, cultural use and cultural resources. This information is incorporated into this EA by reference (see page 14). Specific to this EA, an appraisal is done on the proposed timber sale which takes into consideration the cost of the logging operation and compares that to the value of the timber to be harvested. Only under very rare circumstances would BLM continue with a sale where logging costs exceed timber values. In most cases, timber values greatly exceed logging costs. For example, the nearby Black Butte thinning, completed in 1998, resulted in direct payments to the federal government of nearly \$250,000 above estimated logging costs. Similar economic benefits would be expected from implementation of the Proposed Action.

VI. REFERENCES

USDA Forest Service and USDI Bureau of Land Management. February 1994. Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl. Portland, Oregon.

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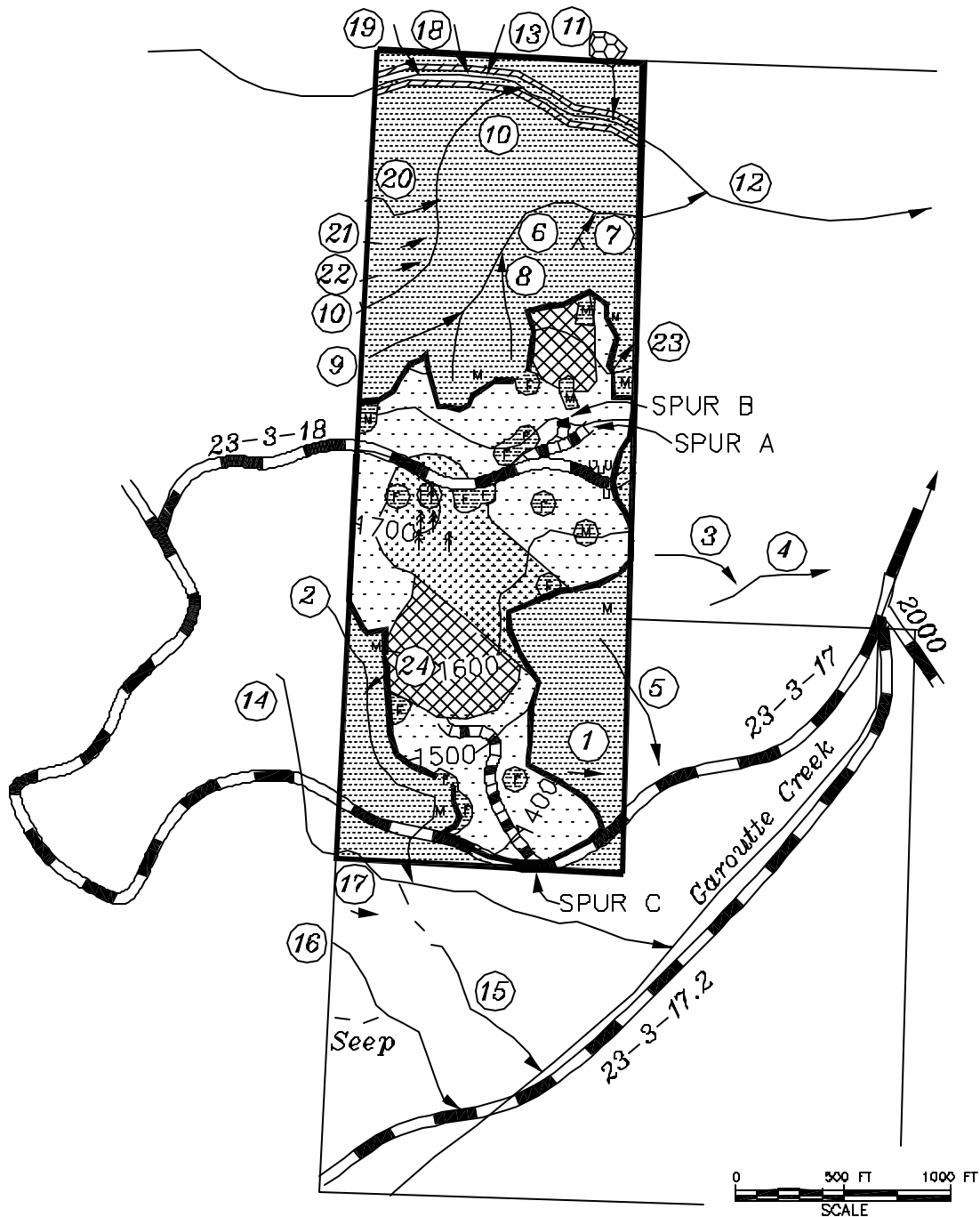
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USDA Forest Service and USDI Bureau of Land Management. October 1997. Instruction Memorandum No. OR-98-003, Survey and Manage Management Recommendations - Fungi, Version 2.0. Portland, Oregon.

USDI Bureau of Land Management. May 2000. Draft *Otidea onotica* Protection Buffer rationale for the Eugene District. Eugene, Oregon: Eugene District Office.

ALTON HILL
PROPOSED ACTION
T. 23S , R. 3W , SEC. 17 , WILL. MER., EUGENE DISTRICT



LEGEND

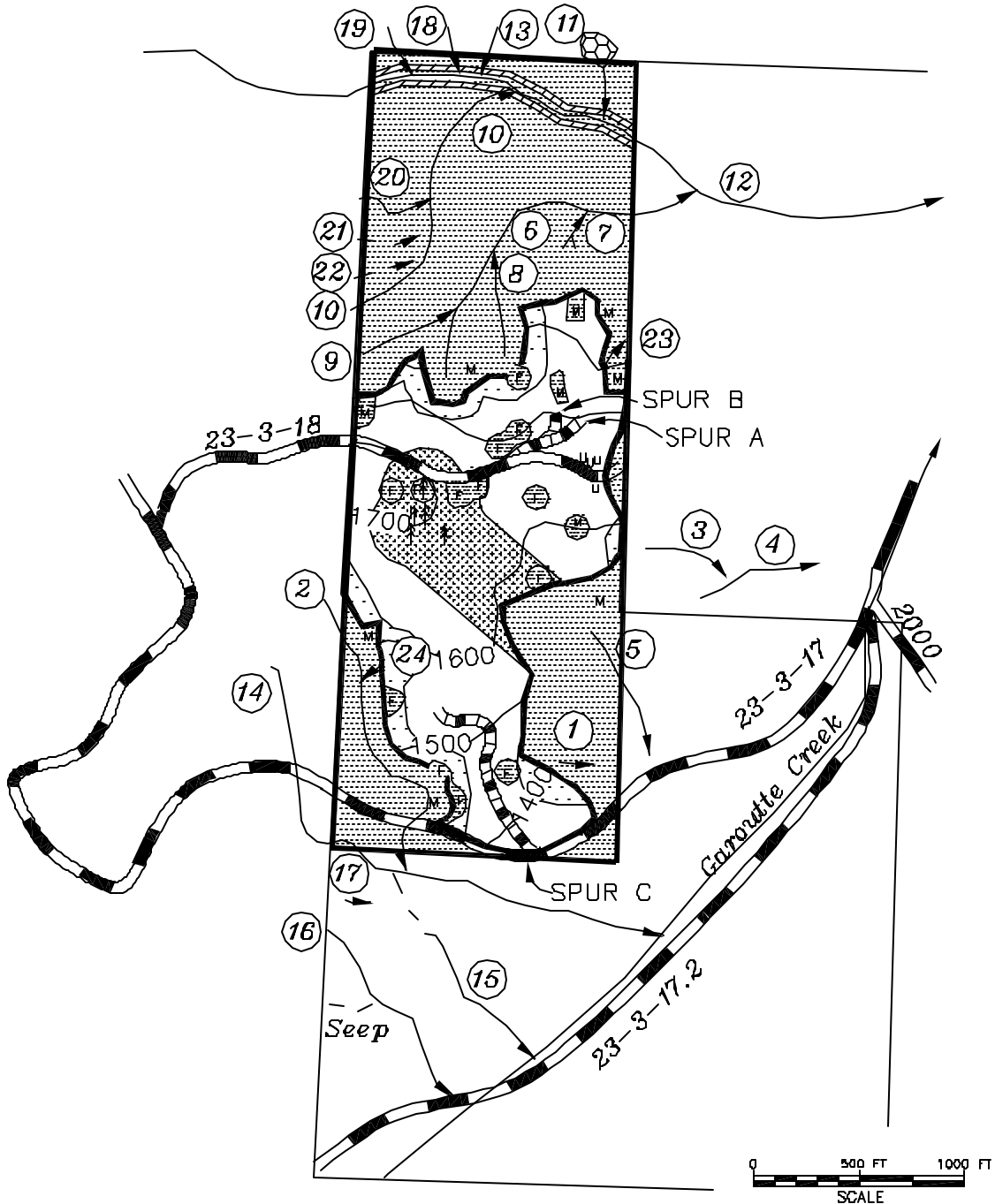
	PROPOSED HARVEST AREA
	STREAM ENHANCEMENT PROJECT
	WETLAND
	OVERSTOCKED AREAS
	RESERVE AREA
	RED TREE VOLE RESERVE

	RED TREE VOLE NEST TREE
	F FUNGI SITE
	M MOLLUSK SITE
	U ULOTIA SITE
	STREAM
	ROCKED ROADS
	ROADS TO BE CONSTRUCTED

DATE: 6/22/2000

ALTON HILL
ALTERNATIVE A

T. 23S , R. 3W , SEC. 17 , WILL. MER., EUGENE DISTRICT



LEGEND

	PROPOSED REGENERATION HARVEST AREA		RED TREE VOLE NEST TREE
	PROPOSED PARTIAL HARVEST AREA		FUNGI SITE
	STREAM ENHANCEMENT PROJECT		MOLLUSK SITE
	WETLAND		ULOTA SITE
	RESERVE AREA		STREAM
	RED TREE VOLE RESERVE		ROCKED ROADS
			ROADS TO BE CONSTRUCTED

DATE: 6/22/2000

ENVIRONMENTAL ASSESSMENT NO. OR090-00-25

Alton Hill Timber Sale
Timber Sale Tract No. E-99-381

Prepared by
Janet Zentner
Forester

August 2000

United States
Department of the Interior
Bureau of Land Management
Eugene District Office
South Valley Resource Area